Perioperative Management of the Pediatric Chronic Pain Patient

-What Anesthesiologists Need to Know-

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07 March 2014
Conflicts of Interest

• None to disclose
Cases

- 14yo healthy anxious female with chronic generalized pain and deconditioning on metoprolol, pyridostigmine; for wisdom tooth extraction
- 15 yo male with pectus excavatum for Nuss procedure
- 12yo female with relapsed ALL with headache for a lumbar puncture
Objectives

• Characterize the impact of chronic pain in the perioperative period
• Discuss strategies for acute pain management in the context of chronic pain
• Describe the strategy of chronic pain rehabilitation
Impact of Chronic Pain

• Chronic pain is common

• Pertinent Issues
  – Medical diagnoses
  – Medications
  – Psychosocial factors

• Acute surgical pain and chronic pain
  – Chronic pain patient coming for surgery
  – Poorly controlled acute pain that develops into chronic pain
Epidemiology

- Pediatric chronic pain in school sample
  - 15-37.3% of children (Simons 2012, Huguet 2008)
  - May underestimate prevalence
- Functional disability
  - Varying disability >30%
  - 3-10% greatly disabled (Hechler 2010)
- HRQOL lower for children with chronic non-cancer pain
- Medical utilization
  - Mean annual cost per adolescent £8000 ($16000)
- Twenty-fold increase in healthcare consultations
Medical Diagnoses of Chronic Pain Patients

- Headache, abdominal pain, generalized pain, CRPS
  - Spinal cord/peripheral nerve stimulators
- Sickle cell, cancer, IBD, etc.
- Deconditioning and POTS
  - Dizziness, spells, tachycardia, nausea
- Nutritional challenges
  - G-tubes, port-a-cath
<table>
<thead>
<tr>
<th>Medications</th>
<th>Opioids</th>
<th>Buprenorphine</th>
<th>Benzodiazepines</th>
<th>Muscle relaxants</th>
<th>Clonidine</th>
<th>Diphenhydramine</th>
<th>Scopolamine</th>
<th>Ondansetron</th>
<th>Amitriptyline/nortriptyline</th>
<th>Gabapentin/pregabalin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metoprolol/propranolol</td>
<td>Fludrocortisone</td>
<td>Midodrine</td>
<td>Pyridostigmine</td>
<td>IVIG</td>
<td>Methylphenidate</td>
<td>Dextroamphetamine</td>
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Medications

- Opioids/buprenorphine
- Benzos/muscle relaxants/diphenhydramine
- Scopolamine
- Ondansetron/amitriptyline/nortriptyline
- Gabapentin/pregabalin
Medications

- Metoprolol/propranolol
- Fludrocortisone
- Midodrine
- Pyridostigmine
- IVIG
- Methylphenidate/dextroamphetamine
Psychosocial Issues

- School attendance
- Delay in functional milestones
- Enmeshed parents
- Anxiety/panic/PTSD
- Mood disturbances
*Strategies of Acute Pain Management in the Context of Chronic Pain*

• Three categories of patients
  – Chronic non-cancer pain
  – Extensive surgery
  – Cancer
Pre-anesthetic Management

• Consider oral premedication
  – Midazolam, acetaminophen
  – Gabapentin for extensive procedures?
• Allow patient to make age-appropriate choices
  – Mask induction vs. peripheral IV
  – Parental presence in OR?
• Be aware of effects of medications
  – Ketamine on anxiety/nightmares
  – Synergistic medication effects
Prevention of Post-operative Pain

• Regional techniques
• Intraoperative ketamine?
• Scheduled adjunctive medications
  – Acetaminophen
  – NSAIDS (ketorolac, ibuprofen)
  – Neurontin
  – Lidoderm patches
• Non-pharmacologic strategies
  – Distraction, diaphagmatic breathing
• Communicate these plans to patients
Management of Acute on Chronic Pain

• Ask about patient’s ‘baseline pain’ level
• Ask about functional limitations at home prior to surgery
• Communicate expectations
  – Some pain is normal
  – Activity level
  – IV vs PO pain medications
• Provide opportunity to ask questions
Opioid Management

- Restart home pain medications as appropriate
  - Opioids, adjunctive medications
  - Oxycodone 10mg q 6 hours, i.e.

- Provide appropriate pain medications specific for surgical procedure
  - Fentanyl PCA, i.e.
  - Caution with multiple sedating drugs
    - benzodiazepines, diphenhydramine, etc.
*Theory of Chronic Pain Rehabilitation*

- Ensure appropriate and thorough medical evaluation
- Encourage school attendance and engagement in life from the beginning
- ‘Children first, patient second’
- Empowerment/self-esteem
- Introduce non-pharmacologic and biobehavioral pain management strategies as early as possible
Take Home Points

- Ask about patient’s concerns
- Restart home medications
- Communicate appropriate expectations
- Multimodal treatment for pain
- Team involvement
References

- Simons